REMARKS

Reconsideration of this application, as amended, is respectfully requested. In this amendment, the title and abstract have been corrected as requested by the Examiner. The objections to the drawings have been obviated by the above amendments to the claims. For the features recited in claim 6, refer to Figures 6B and 8, for example. For the features of claim 15, refer to Figure 4, for example.

The rejections of the claims under 35 U.S.C. §112, second paragraph, have been obviated by the above amendments.

With respect to the rejections under 35 U.S.C. §102(b) and §103, it is noted that claim 36 is now the sole independent claim. Claim 36 recites an electrical connector having a number of bus conductors. Each of the bus conductors runs through the length of the connector yet each is isolated from the others. See, for example, figure 10.

Compliant contact regions are disposed at various positions along the lengths of the bus conductors so as to provide electrical coupling points for like contact regions of electrical devices to be received within the connector. Examples of such compliant coupling regions are shown in figures 3A, 3B, 4, 8, 9 and 11.

Further, the bus conductors can be considered as being divided into two groups so that across the width of the connector, bus conductors of the first group are interlaced with bus conductors of the second group. The transmission line impedance of any pair of adjacent bus conductors is thus determinable, for example as described at page 12, lines 15-23 of the Specification.

The bus conductors of the first group are adapted to be electrically coupled to respective signal paths associated with a circuit board on which the connector may be mounted through only two electrical contact elements, regardless of the number of compliant contact regions. An example of such an arrangement is shown in Figure 3A. As recited in claim 36, the two electrical contact elements of such bus conductors (e.g., elements 32 of Figure 3A) are disposed substantially near the ends of the bus conductor.

In contrast, bus conductors of the second group are adapted to be electrically coupled to an electrical ground plane associated with the circuit board through a number of electrical contact elements disposed along the length of the conductor. An example of this arrangement is shown in Figure 3B. Again, the number of electrical contact elements for the bus conductors of the second group is irrespective of the number of compliant contact regions.

None of the cited references, whether considered alone or in combination, teach or suggest the features of the electrical connector recited in claim 36. For example, consider Pond et al., U.S. Patent No. 3,368,117. Pond discloses contact strips 21 that include contacts 33 for receiving circuit boards 18. The contact strips 21 run the length of the connector and are coupled in electrical contact with conductors 24 through posts 21A at the ends of the contact strip 21. However, missing in Pond is any teaching or suggestion of a second type of bus conductors which are adapted to be electrically coupled to a ground plane through a number of electrical contact elements disposed along their lengths, as is recited in claim 36. Thus, the present claims are patentable over Pond.

Feldman, U.S. Patent No. 4,616,893, discloses a surface mount busing connector that includes bus bars 46 which may be used to provide high current power or ground halves. It appears that the bus bars may be provided with a number of slots and feet to provide mechanical interconnection to a supporting circuit board, thereby serving to stiffen the circuit board. However, there is no teaching or suggestion that these additional couplings provide electrical connection to a ground plane.

Even if the additional electrical couplings are provided by the bus bars of Feldman, it is apparent that only one type of bus bar is contemplated. In other words, there is no teaching or suggestion of the use of two different types of bus bars as recited in the present claims. Thus, Feldman provides no motivation for combination with Pond (which also lacks any teaching for using different types of bus conductors in a single connector) to provide the two different groups of bus conductors recited in claim 36. Accordingly, the claims are patentable over this combination of references.

Patel, U.S. Patent No. 5, 329,424, describes a bus bar holder for securing bus bars to a printed circuit board, however, such a holder provides only mechanical and not electrical coupling for the bus bar. Thus, Patel fails to cure the deficiencies of Pond noted above and the present claims are patentable over any combination of these references.

Larson et al., U.S. Patent No. 3,567,999, describes an integrated circuit panel which includes a multi-layer, multi-terminal laminant bus bar system that may be mechanically attached to a circuit board. However, each of the conductive layers of the multi-layer bus bar system appears to be of the same type in that electrical connection to power and/or ground is provided only near the ends of the busses. Accordingly, Larsen fails to cure the deficiencies of Pond discussed above.

Thompson, U.S. Patent No. 3,085,177, describes a device that allows for the construction of electrical circuits. It is true that Thompson shows the use of resilient materials to provide compliant coupling for busses. However, Thompson fails to teach or suggest the use of different groups of bus conductors as recited in the present claims and, accordingly, fails to cure the deficiencies of Patel. The present claims are therefore patentable over these references.

Uberbacher, U.S. Patent No. 3,399,372, discloses only a single bus conductor 43 which runs the length of the connector and therefore fails to cure the deficiencies of Patel discussed above. Accordingly, the claims are patentable over the combination of these references.

Ahiskali, U.S. Patent No. 4,536,826, discloses a snap-in bus bar that allows electrical busses to be connected thereto. However, the electrical busses are of only one type and have electrical connections disposed substantially near their ends. Accordingly, the present claims are patentable over the combination of Patel and Ahiskali for the reasons discussed above.

Rasmussen, U.S. Patent No. 2,904,768, discloses only one form of bus connector, i.e., that having electrical connections dispose substantially near its ends. For example, as shown in figure 4, the electrical connections 53 are found near the end of

portions of the bus 50. Accordingly, Rasmussen fails to cure the deficiencies of Patel and the claims are patentable over the combination of these references.

Demler, Jr. et al., U.S. Patent No. 4,867,696, discloses a laminated bus bar having a sandwiched arrangement of individual bus conductors. However, it is apparent that each of the individual bus conductors (e.g. 502A, 502B, 502C and 502D) provide for electrical coupling to various conductors only at their ends. Thus, Demler fails to cure the deficiencies of Patel and, hence, the claims are patentable over the combination of these references.

Grabbe et al., U.S. Patent No. 5,104,324 fails to cure this deficiency in Demler as Grabbe discloses only a single type of connector in which conductors are electrically connected at multiple points to a substrate. There is no teaching or suggestion in either of the references to combine the different types of conductors in a single connector as recited in the present claims.

Cobaugh et al., U.S. Patent No. 4,241,381, discloses a bus bar assembly which fails to include the two groups of bus conductors recited in the present claims. Accordingly, the claims are patentable over Cobaugh whether considered alone or in combination with any of the references described above.

For all the foregoing reasons, the present claims are patentable over the cited references.

Please charge any deficiencies or fees to our Deposit Account No. 02-2666.

Respectfully submitted,

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